

# Reflection as the Foundation for E-Portfolios

Barbara B. Levin  
Department of Curriculum and Instruction  
The University of North Carolina at Greensboro  
United States  
[Barbara\\_Levin@uncg.edu](mailto:Barbara_Levin@uncg.edu)

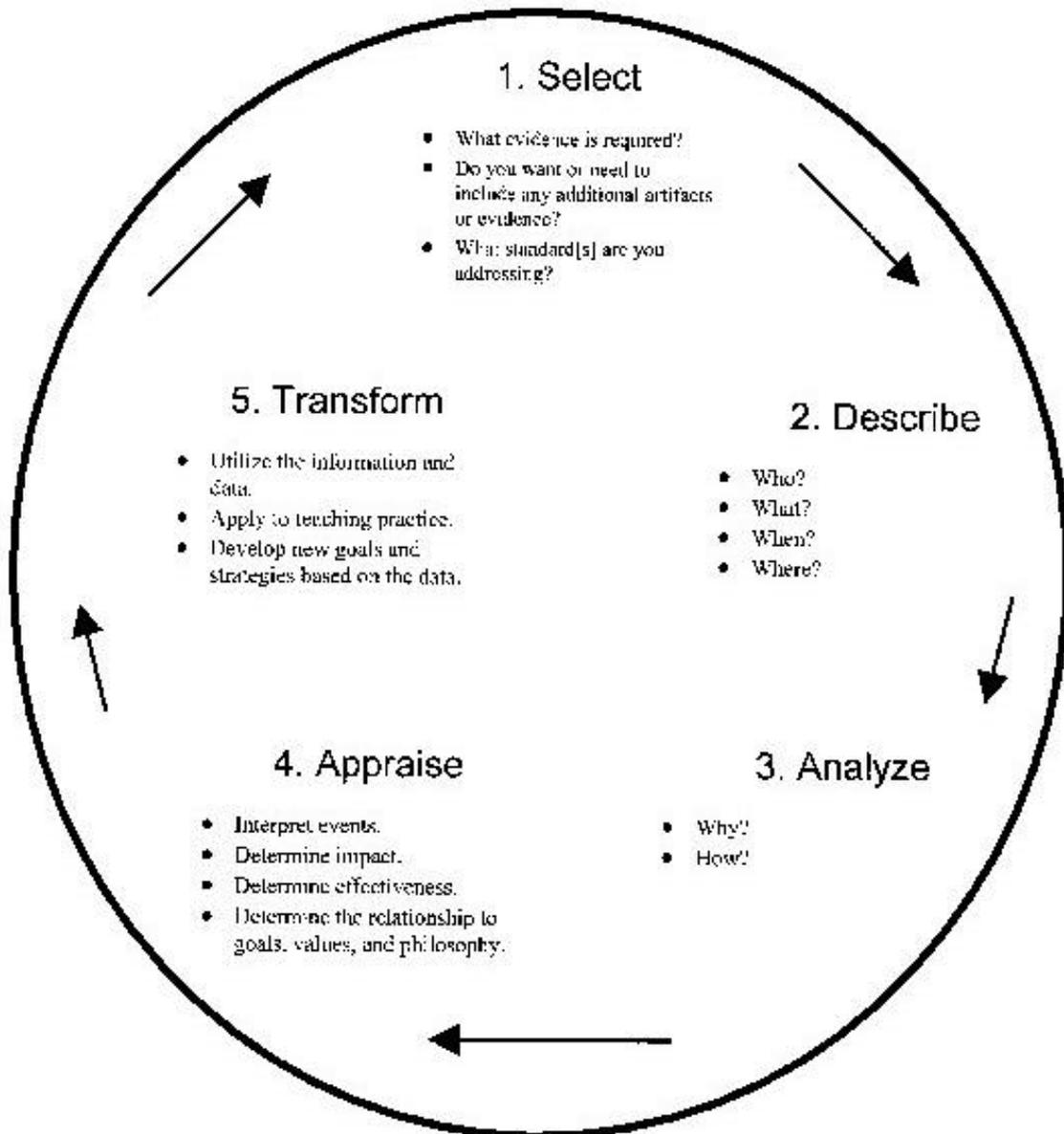
Jean S. Camp  
School of Education  
The University of North Carolina at Greensboro  
United States  
[Jean\\_Camp@uncg.edu](mailto:Jean_Camp@uncg.edu)

**Abstract:** This paper describes a process used to guide written reflections used for entries in technology portfolios that are required for teacher licensure in North Carolina. While supporting artifacts are important evidence of meeting ISTE's technology standards for teachers (NETS-T), we believe the focus of our electronic technology portfolios should be on our preservice teachers' ability to reflect about their personal and professional uses of technology for teaching and learning. This paper includes an example of an entry from our model electronic portfolio that clearly delineates all the steps of *The Reflection Cycle*: selection, description, analysis, appraisal, and transformation.

## Introduction

Reflection is a highly valued attribute of effective teachers (Henderson, 1996; LaBoskey, 1994; Lyons, 1998; Ross, Johnson & Smith, 1992; Zeichner & Liston, 1987). Without the disposition to reflect on their performance, teachers are less likely to improve their practice or to be able to see the links between theory and practice. While some research states that only 20% of teachers are naturally reflective (LaBoskey, 1994), we believe that this habit of mind is so important that we must try to teach all prospective teachers how to reflect on their practice. One way we do this is to use a specific model of reflection with our preservice teachers while they are developing their teaching and technology portfolios.

In our teacher education programs at The University of North Carolina at Greensboro (UNCG), we provide many opportunities for reflective writing including response journals, electronic discussions, self-assessments, and peer coaching. We also explicitly teach a process for reflective writing in our elementary education program and emphasize this practice while our teacher candidates are gathering evidence for their technology portfolios. Reflective thinking and reflective writing are required in our curriculum, but we focus on developing these skills during the preparation of technology portfolios that are required for initial licensure of every teacher in North Carolina. In our post-baccalaureate elementary teacher education program, we also focus heavily on reflective writing, as these students must prepare an integrated teaching and technology portfolio as a requirement for the Masters degree. Another incentive for teaching our students a specific process of reflective thinking is that the state of North Carolina requires initially-licensed teachers to prepare a performance-based (PBL) product, which is essentially a teaching portfolio, in order to obtain a professional teaching license. In an effort to help our prospective teachers be successful in developing their PBL product, we begin teaching them a specific process for reflective writing using *The Reflection Cycle* (see Figure 1) during their preservice teacher education program. We hope that this process has heuristic value for our students as they move into their chosen profession, so that they will think reflectively about their students' learning, the curriculum, and their teaching practices.



North Carolina Department of Public Instruction

**Figure 1. The Reflection Cycle**  
 Source: NC Department of Public Instruction  
<http://www.ncpublicschools.org/pbl/pblreflect.htm>

## **Integrated teaching and technology e-portfolios**

While some teacher education programs at UNCG require separate technology portfolios, most require teaching portfolios with technology integrated throughout them. Technology and teaching portfolios emphasize reflection that requires descriptive, analytical, and transformative writing about the evidence presented in these portfolios. Although our portfolios are organized around standards, including the ISTE NETS-T and the INTASC standards (or our state's Advanced Competencies for Master Teachers for M.Ed candidates), our prospective teachers are asked to use *The Reflection Cycle* to justify how their artifacts meet each standard. The overall goal of this focus on reflection is to foster understanding of how technology will impact teaching and student learning. We find that pushing our preservice teachers to go beyond describing the evidence in their portfolios to analyzing and appraising it, and then to thinking about how it transforms their practice, requires a concerted effort on their part and ours.

Recently we have begun the process of moving from print to electronic portfolios that integrate teaching and technology standards, following models developed by Helen Barrett of the University of Alaska. However, our version of e-portfolios continues to emphasize reflection and use of *The Reflection Cycle*. In fact, we spend as much time helping students learn to reflect on how they can use technology to promote student learning as we spend on refining their own technology competencies as professional educators. As our preservice teachers begin collecting evidence to demonstrate mastery of the NETS-T and INTASC standards, they simultaneously learn and practice their reflective thinking and writing skills. Evaluation of their e-portfolios is based mainly on their success in using *The Reflection Cycle* to (a) describe each entry, (b) analyze why and how their evidence meets a particular standard, (c) appraise their evidence against their effectiveness for teaching and learning, as well as against the goals, values, and philosophy of the standards, and (d) write transformative statements about how the evidence applies to their teaching practice and how they will do things differently in the future.

## **Scaffolding reflective writing**

Among the supports we provide our preservice teachers as they learn to use *The Reflection Cycle* are examples of reflective writing based on this model. We provide both good and poor models of reflective essays so that our preservice teachers can identify elements of *The Reflection Cycle* in examples that are well-written and those that need revisions, or may even have essential elements missing from the examples. We follow this with written feedback on drafts of reflective essays submitted with supporting evidence, which will eventually go into their teaching/technology portfolios. We also provide opportunities for peer coaching and peer feedback when at least half of the preservice teachers have become adept at using *The Reflection Cycle*.

The following example, which is taken from the model Teaching/Technology E-Portfolio that we have online at [http://www.uncg.edu/soe/affiliates/teachers\\_academy/e\\_portfolio/main.html](http://www.uncg.edu/soe/affiliates/teachers_academy/e_portfolio/main.html), actually has the parts of *The Reflection Cycle* labeled, so that readers can easily see the selection, description, analysis, appraisal, and transformative sections of the reflective essay. This example meets NETS-T #6 (*Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.*), as well as INTASC principles # 9 (*The teacher is a reflective practitioner who continually evaluates the effects of his/her choices and actions on others (students, parents, and other professionals in the learning community) and who actively seeks out opportunities to grow professionally.*) and #10 (*The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.*). In fact, in the e-portfolio, standards that are indicated in parentheses are hyperlinked to copies of these standards. There are also hyperlinks to specific artifacts that provide supporting evidence for the reflection, such as the PowerPoint slideshow discussed in this example.

## **Example of Reflective Portfolio Entry about Social, Legal, Ethical, and Human Issues (ISTE-NETS-T #6)**

**Select:** I developed and facilitated a PowerPoint presentation for parents and teachers at a PTA meeting at Verifine Elementary School (INTASC #9, #10). The presentation was about social, ethical, legal, and human issues with respect to technology use (NETS-T#6).

**Describe:** During my presentation (see Artifact #1-PowerPoint slideshow) we discussed how to protect one's privacy while using the Internet. We identified problems and dangers that students might encounter when using the Internet and I demonstrated the filtering software that we use at Verifine School (see Artifact #2 – link to information about filtering software). Then we brainstormed rules that students would follow when they are online to avoid these problems (INTASC #10). Next, I explained the Acceptable Use Policy (AUP) at Verifine School (see Artifact #3 – copy of AUP). Each parent received a copy of the policy to discuss with their child before signing and returning it. (NETS-T #6, INTASC #10). Next we examined equity issues around technology. I shared statistics demonstrating gender inequity with regard to computer technology (NETS #6). We brainstormed strategies that students can use to recognize bias in materials. We also discussed some of the things that students need to consider when collaborating on projects, especially computer-based projects. We discussed what students and parents need to know when evaluating the authenticity of material found on the Internet. Finally, we talked a lot about copyright issues, especially how it relates to electronic material and how the “fair use” policy is used by educators (Artifact #4-link to copyright information).

**Analyze:** I think parents and teachers learned a lot from the presentation. I am also confident that they will share this information with their children and model responsible ethical and legal decision-making concerning technology (INTASC #9, #10, NETS-T #6). I found that my presentation was aided greatly by my use of technology (INTASC #9). Using PowerPoint helped me organize my presentation into a series of slides that contained talking points. As I facilitated the presentation and ensuing discussions, the slides kept me focused without having to look at my notes.

**Appraise:** I realized that parents are receptive to learning new things about educational uses of technology. They were glad to hear more about our AUP and to know that we are teaching how to use the Internet responsibly (INTASC #10). I believe that PowerPoint was an effective use of technology because it created a bright and appealing visual aid that kept the audience focused.

**Transform:** If I were to do this presentation again I would definitely use PowerPoint, but I would change two things. The first thing is that I would invite parents and students to come to the meeting together. The presentation is appropriate for children and they would have also learned a great deal. I think this would be a great opportunity for parents and children to learn something together (INTASC #10). The next thing I would change would be to include specific scenarios that deal with social, legal, ethical, and human issues around technology (Artifact #5-example of scenario about piracy). I think such examples would make the presentation more interesting and the content more understandable for the learner (INTASC #9, NETS-T #6). In the future, I also plan to make use of PowerPoint in the classroom because the visual nature of the slides will help some students stay on task and the organizational schema will help students understand and remember material – especially my visual learners.

## **Progress toward reflective thinking in e-portfolios**

We believe the quality of our teaching/technology portfolios has improved over the five years we have required them. Such improvement seems to be commensurate with the focus we have placed on integrating the reflective cycle into our professional courses. By the time our prospective teachers graduate, reflecting seems to be a natural process and, hopefully, is one habit of mind they will take not only into their induction period, but throughout their teaching career. As we evaluate this year's teaching/technology portfolios we will continue to refine our efforts to support prospective teachers as they learn to reflect about their practice and about their students' learning. We feel that they have made progress during the past five years, but we will continue to strive to help our students develop into reflective practitioners.

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